

Abstract

[0062] A method of monitoring the wear of a grinding wheel comprises the steps of measuring the force exerted between the wheel and a workpiece, measured normal to the grinding face of the wheel at the point of contact between the wheel and workpiece, and generating a warning signal when the measured force exceeds a predetermined threshold value. A signal indicative of the normal grinding force is obtained by measuring the force exerted by a wheelfeed drive which in use urges the wheel into grinding engagement with the workpiece. Where the wheelfeed drive includes an electrically powered motor, the torque developed by the motor will be proportional to the normal force between the wheel and workpiece. This in turn is proportional to the electrical power drawn by the motor during operation, so an indication of the force between wheel and workpiece is obtained by measuring the power demand made by the motor on its power supply. The value of the force proportional signal obtained while grinding a workpiece is compared with a corresponding value obtained during the grinding of a preceding similar workpiece, and a warning signal is generated if a current grinding force signal value differs from a preceding grinding force signal value by more than a predetermined amount. Mean force values may be computed during each of a succession of workpiece grinds on similar components and the value for a current workpiece can be compared with the mean value for a plurality of preceding workpiece grinds. Alternatively the peak value of the normal grinding force signal value during a current grind may be compared with a predetermined value to generate a warning signal.